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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/118,833 07/20/98 NISHI T 0965-0232P-S

002292 IM62/0410
BIRCH STEWART KOLASCH & BIRCH
P O BOX 747
FALLS CHURCH VA 22040-0747

EXAMINER

CREPEAU, J

ART UNIT PAPER NUMBER

1745

DATE MAILED: 04/10/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/118,833

Applicant(s)

Nishi et al

Examiner
Jonathan Crepeau

Group Art Unit
1745



Responsive to communication(s) filed on Feb 28, 2000.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 4-17 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 4-17 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Response to Amendment

1. This Office action addresses newly added claims 4-17. Claims 4, 5, 12, and 13 are rejected under 35 USC 112, second paragraph. All the claims are rejected under 35 USC 103, as being obvious over the art of record (Soma et al). Therefore, this action is made final.

Claim Objections

2. Claims 11, 13, 15, and 17 are objected to because of the following informalities: in line 2, “a” should be inserted before “fuel electrode”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

/ 4. Claims 4, 5, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the phrase “co-sinter type”. The word “type” renders the expression indefinite, and its removal is suggested.

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Claim Rejections - 35 USC § 103

5. Claims 4-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soma et al (U.S. Pat. 5,411,767). Soma et al teach a solid electrolyte type fuel battery having an interconnector comprising a material having the formula ABO_3 , wherein A is preferably Ca, Ba, or Sr, and B is preferably Ti (see column 5, lines 13-38). In column 4, line 40 through column 5, line 12, a formula of $(\text{La}_{1-x}\text{D}_x)_{1-u}\text{B}_{1-w}\text{O}_3$ is taught, where D can be Ca, Sr, Ba, or nothing (when $x = 0$), and B can be Ti (+Mg, +Nb). Soma et al also teach the other elements of the fuel cell, i.e., the fuel electrode, air electrode, electrolyte, and substrate, in Figure 1.

The reference does not explicitly teach that the battery is of a co-sinter type or that the interconnector is integrally burned within the battery, or that the current passage of the interconnector is current collection in the vertical direction. The reference further does not teach the same subscript ranges for the $(\text{La}_{1-x}\text{D}_x)_{1-u}\text{B}_{1-w}\text{O}_3$ compounds as recited in instant claims 6 or 8.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the direction of current collection is a design choice that may be manipulated according to the needs of the artisan. From Figs. 1 and 2 of the reference, it is apparent that current could be collected in the “vertical” direction. Even so, the “vertical direction” of the series-connected fuel cells may be an arbitrary direction, depending on the orientation of the fuel cells. Thus, the artisan may adjust the orientation of stack to suit a particular application, resulting in current collection in the “vertical” direction.

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Additionally, regarding the “co-sinter type” and “integrally burned” limitations in the claims, these limitations are not considered to patentably distinguish over the Soma et al reference. The prior art discloses the structural elements of the claims, and the courts have held that using a one-piece construction instead of the structure disclosed in the prior art (i.e., “making integral”) would merely be a matter of obvious engineering choice. See MPEP §2144.04V(B) and *In re Larson*, 144 USPQ 347, 349 (CCPA 1965).

Regarding the subscript ranges of the $(La_{1-x}D_x)_{1-u}B_{1-w}O_3$ material, these ranges have not been shown to be critical variables in the practice of the invention. Thus, the prior art is sufficient to render *prima facie* obvious the claimed ranges. Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range (*In re Woodruff*, 16 USPQ2d 1934).

Response to Arguments

Applicant's arguments filed 2/28/00 regarding the direction of current collection have been fully considered but they are not persuasive. While it may be advantageous to collect current in a “vertical direction”, this limitation is still seen as obvious because it is dependent on the orientation of the fuel cells. The orientation of the fuel cells is not claimed, so the recitation of a “vertical direction” still does not patentably distinguish the claims from the art of record.

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Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maria Nuzzolillo, can be reached at (703) 305-3776 from Monday-Thursday. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

Documents may be faxed to (703) 306-3429. The official fax number for documents of extreme importance is (703) 305-3599 (it will take longer to receive documents faxed to this number; therefore the first number is preferred).

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Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

April 7, 2000

Maria Hernandez
Supervisory Patent Examiner
Technology Center 1700

